Internet Of Things Sas

This open access book was prepared as a Final Publication of the COST Action IC1304 “Autonomous Control for a Reliable Internet of Services (ACROSS)”. The book contains 14 chapters and constitutes a show-case of the main outcome of the Action in line with its scientific goals. It will serve as a valuable reference for undergraduate and post-graduate students, educators, faculty members, researchers, engineers, and research strategists working in this field. The explosive growth of the Internet has fundamentally changed the global society. The emergence of concepts like SOA, SaaS, PaaS, IaaS, NaaS, and Cloud Computing in general has catalyzed the migration from the information-oriented Internet into an Internet of Services (IoS). This has opened up virtually unbounded possibilities for the creation of new and innovative services that facilitate business processes and improve the quality of life. However, this also calls for new approaches to ensuring the quality and reliability of these services. The objective of this book is, by applying a systematic approach, to assess the state-of-the-art and consolidate the main research results achieved in this area.

This book provides a valuable reference for digital forensics practitioners and cyber security experts operating in various fields of law enforcement, incident response and commerce. It is also aimed at researchers seeking to obtain a more profound knowledge of Digital Forensics and Cybercrime. Furthermore, the book is an exceptional advanced text for PhD and Master degree programmes in Digital Forensics and Cyber Security. Each chapter of this book is written by an internationally-renowned expert who has extensive experience in law enforcement, industry and academia. The increasing popularity in the use of IoT devices for criminal activities means that there is a maturing discipline and industry around IoT forensics. As technology becomes cheaper and easier to deploy in an increased number of discrete, everyday objects, scope for the automated creation of personalised digital footprints becomes greater. Devices which are presently included within the Internet of Things (IoT) umbrella have a massive potential to enable and shape the way that humans interact and achieve objectives. These also forge a trail of data that can be used to triangulate and identify individuals and their actions. As such, interest and developments in autonomous vehicles, unmanned drones and ‘smart’ home appliances are creating unprecedented opportunities for the research communities to investigate the production and evaluation of evidence through the discipline of digital forensics.

Learn to program SAS by example! Learning SAS by Example, A Programmer’s Guide, Second Edition, teaches SAS programming from very basic concepts to more advanced topics. Because most programmers prefer examples rather than reference-type syntax, this book uses short examples to explain each topic. The second edition has brought this classic book on SAS programming up to the latest SAS version, with new chapters that cover topics such as PROC SGPLOT and Perl regular expressions. This book belongs on the shelf (or e-book reader) of anyone who programs in SAS, from those with little programming experience who want to learn SAS to intermediate and even advanced SAS programmers who want to learn new techniques or identify new ways to accomplish existing tasks. In an instructive and conversational tone, author Ron Cody clearly explains each programming technique and then illustrates it with one or more real-life examples, followed by a detailed description of how the program works. The text is divided into four major sections: Getting Started, DATA Step Processing, Presenting and Summarizing Your Data, and Advanced Topics. Subjects addressed include Reading data from external sources Learning details of DATA step programming Subsetting and combining SAS data sets Understanding SAS functions and working with arrays Creating reports with PROC REPORT and PROC TABULATE Getting started with the SAS macro language Leveraging PROC SQL Generating high-quality graphics Using advanced features of user-defined formats and informats Restructuring SAS data sets Working with multiple observations per subject Getting started with Perl regular expressions You can test your knowledge and hone your skills by solving the problems at the end of each chapter.

Better understand your customers using segmentation analytics in SAS Viya! Segmentation Analytics with SAS Viya: An Approach to Clustering and Visualization demonstrates the use of clustering and

machine learning methods for the purpose of segmenting customer or client data into useful categories for marketing, market research, next best offers by segment, and more. This book highlights the latest and greatest methods available that show the power of SAS Viya while solving typical industry issues. Packed with real-world examples, this book provides readers with practical methods of using SAS Visual Data Mining and Machine Learning (VDMML), SAS Model Studio, SAS Visual Statistics, SAS Visual Analytics, and coding in SAS Studio for segmentation model development and analysis. This boo is designed for analysts, data miners, and data scientists who need to use the all in-memory platform of SAS Viya for the purposes of clustering and segmentation. Understanding how customers behave is a primary objective of most organizations, and segmentation is a key analytic method for achieving that objective.

How Cloudiness Keeps Changing Our Life, Economy and Technology

Computer Vision with SAS

A Programmer's Guide, Second Edition

The Little SAS Book

Data Science for Internet of Things

Intelligence at the Edge

Inventing the Cloud Century

Machine learning is a branch of artificial intelligence (AI) that develops algorithms that allow computers to learn from examples without being explicitly programmed. Machine learning identifies patterns in the data and models the results. These descriptive models enable a better understanding of the underlying insights the data offers. Machine learning is a powerful tool with many applications, from real-time fraud detection, the Internet of Things (IoT), recommender systems, and smart cars. It will not be long before some form of machine learning is integrated into all machines, augmenting the user experience and automatically running many processes intelligently. SAS offers many different solutions to use machine learning to model and predict your data. The papers included in this special collection demonstrate how cutting-edge machine learning techniques can benefit your data analysis. Also available free as a PDF from sas.com/books.

The ubiquity of modern technologies has allowed for increased connectivity between people and devices across the globe. This connected infrastructure of networks creates numerous opportunities for applications and uses. As the applications of the internet of things continue to progress so do the security concerns for this technology. The study of threat prevention in the internet of things is necessary as security breaches in this field can ruin industries and lives. Securing the Internet of Things: Concepts, Methodologies, Tools, and Applications is a vital reference source that examines recent developments and emerging trends in security and privacy for the internet of things through new models, practical solutions, and technological advancements related to security. Highlighting a range of topics such as cloud security, threat detection, and open source software, this multi-volume book is ideally designed for engineers, IT consultants, ICT procurement managers, network system integrators, infrastructure service providers, researchers, academics, and professionals interested in current research on security practices pertaining to the internet of things.

This book gathers recent research work on emerging Artificial Intelligence (AI) methods for processing and storing data generated by cloud-based Internet of Things (IoT) infrastructures. Major topics covered include the analysis and development of AI-powered mechanisms in future IoT applications and architectures. Further, the book addresses new technological developments, current research trends, and industry needs. Presenting case studies, experience and evaluation reports, and best practices in utilizing AI applications in IoT networks, it strikes a good balance between theoretical and practical issues. It also provides technical/scientific information on various aspects of AI technologies, ranging from basic concepts to research grade material, including future directions. The book is intended for researchers, practitioners, engineers and scientists involved in the design and development of protocols and AI applications for IoT-related devices. As the book covers a wide range of mobile applications and scenarios where IoT technologies can be applied, it also offers an essential introduction to the field.

Advances in hardware technology have lead to an ability to collect data with the use of a variety of sensor technologies. In particular sensor notes have become cheaper and more efficient, and have even been

integrated into day-to-day devices of use, such as mobile phones. This has lead to a much larger scale of applicability and mining of sensor data sets. The human-centric aspect of sensor data has created tremendous opportunities in integrating social aspects of sensor data collection into the mining process. Managing and Mining Sensor Data is a contributed volume by prominent leaders in this field, targeting advanced-level students in computer science as a secondary text book or reference. Practitioners and researchers working in this field will also find this book useful.

What Everyone Needs to Know®

Exploring SAS Viya

Internet of Things, Smart Spaces, and Next Generation Networking

Machine Learning with SAS

101 Careers in Mathematics: Fourth Edition

Design and Analysis of Experiments with SAS

Data Mining and Machine Learning

Data Science for Internet of Things provides a concise introduction to the application of Predictive learning algorithms to Internet of Things. This mini book is based on my teaching at Oxford University, UPM(University of Madrid) and also working with consulting clients.We first outline the key issues involved and then explores three key areas: Stream processing, Deep Learning and Sensor fusion for IoT. The book is also a recommended material for the Stanford University course : Building a Successful Business for the Internet of Things and Mobile (BUS20)

"Many of us go about our daily lives completely-some might say blissfully-unaware that we are surrounded by a cornucopia of devices that are running on various connected platforms and recording our physical presence, voices, heartbeats, and preferences. Have a look around you. Beyond your computer, tablet, or smartphone, how many 'things' that you see are connected to the Internet, either directly or indirectly? Are you wearing a Fitbit or an Apple Watch or using Airpods? Is there an Echo or Google Home in range? What about a connected fridge or smart laundry appliance? How far is the nearest Wi-Fi connected doorbell, light bulb, printer, or diaper? What about your heating and air conditioning and security systems? Now, do you know what data each of these devices is busily recording - or how that data is used or protected? What about the device itself - do you trust it to function consistently and safely? Does it matter? There is a great deal of buzz surrounding the Internet of Things (IoT), which is the notion, simply put, that nearly everything in our physical world - from gym shorts to streetlights to baby monitors, elevators, and even our own bodies - will be connected in our digital world. The Internet of Everything (IoE) (a term that Cisco helped to pioneer) takes this notion a step further by referring to not only the physical infrastructure of smart devices and services but also their impacts on people, businesses, and society.In the end, this book-indeed, dare we say no stand-alone volume-can do justice to the myriad opportunities and risks replete in the Internet of Things. But, our hope is that, by the end, you will feel like we at least did justice to unpacking some of the most important issues and concepts in

this new frontier of technology and governance. There are no panaceas or magic bullets, and necessary policy or technological changes will not happen overnight; even the "Blockchain of Things" has its limits, as we will see. Dealing with formidable challenges, such as the pace of technological change or the realization of social and political rights online and offline, takes sustained effort. But, as Rev. Dr. Martin Luther King Jr. said in reference to the U.S. civil rights movement, "If you can't fly, then run. If you can't run, then walk. If you can't walk, then crawl, but by all means, keep moving." In that spirit, let's get started!"--

An Up-to-Date, All-in-One Resource for Using SAS and R to Perform Frequent Tasks The first edition of this popular guide provided a path between SAS and R using an easy-to-understand, dictionary-like approach. Retaining the same accessible format, SAS and R: Data Management, Statistical Analysis, and Graphics, Second Edition explains how to easily perform an analytical task in both SAS and R, without having to navigate through the extensive, idiosyncratic, and sometimes unwieldy software documentation. The book covers many common tasks, such as data management, descriptive summaries, inferential procedures, regression analysis, and graphics, along with more complex applications. New to the Second Edition This edition now covers RStudio, a powerful and easy-to-use interface for R. It incorporates a number of additional topics, including using application program interfaces (APIs), accessing data through database management systems, using reproducible analysis tools, and statistical analysis with Markov chain Monte Carlo (MCMC) methods and finite mixture models. It also includes extended examples of simulations and many new examples. Enables Easy Mobility between the Two Systems Through the extensive indexing and cross-referencing, users can directly find and implement the material they need. SAS users can look up tasks in the SAS index and then find the associated R code while R users can benefit from the R index in a similar manner. Numerous example analyses demonstrate the code in action and facilitate further exploration. The datasets and code are available for download on the book's website.

The development of connected, communicating objects is showing no signs of slowing down. With an increasing number of objects available on the market, the evolution of the Internet of Things is leading to more and more fields being explored via information and communication sciences. This book analyzes the ecosystem of the Internet of Things by retracing the historical and technological context of the Internet's evolution from traditional to dynamic, social and semantic, and then towards this ecosystem of connected objects. The evolution of concepts surrounding the Internet of Things is explored via real-life examples of connected objects; both those used for specific functions and for more general everyday objects. Numerous issues associated with these new

technological and digital transformations in a "hyperconnected" world, as well as the impact of the massive influx of connected objects, are discussed. The crucial questions of potential intrusion into the private lives of users as well that of security are then studied.

Internet of Things

Design a security framework for an Internet connected ecosystem, 2nd Edition

Concepts, Methodologies, Tools, and Applications

Securing the Internet of Things: Concepts, Methodologies, Tools, and Applications

A Beginner's Guide to Programming with Python on Microcontrollers

Connecting Sensors and Microcontrollers to the Cloud

The Internet of Things in the Industrial Sector

This book constitutes the joint refereed proceedings of the 13 International Conference on Next Generation Teletraffic and Wired/Wireless Advanced Networking, NEW2AN, and the 6th Conference on Internet of Things and Smart Spaces, ruSMART 2013, held in St. Petersburg, Russia, in August 2013. The total of 38 papers was carefully reviewed and selected for inclusion in this book. The 14 papers selected from ruSMART are organized in topical sections named: internet on things, smart spaces technologies; and smart systems. The 24 papers from NEW2AN deal with the following topics: performance and efficiency analysis, network and transport layer issues; cognitive radio networks; sensor and mesh networks; upper layer protocols and applications; ad-hoc, cellular and satellite networks.

The inside scoop on boosting sales through spot-on analytics Retailers collect a huge amount of data, but don't know what to do with it. Retail Analytics not only provides a broad understanding of retail, but also shows how to put accumulated data to optimal use. Each chapter covers a different focus of the retail environment, from retail basics and organization structures to common retail database designs. Packed with case studies and examples, this book insightfully reveals how you can begin using your business data as a strategic advantage. Helps retailers and analysts to use analytics to sell more merchandise Provides fact-based analytic strategies that can be replicated with the same success the author achieved on a global level Reveals how retailers can begin using their data as a strategic advantage Includes examples from many retail departments illustrating successful use of data and analytics Analytics is the wave of the future. Put your data to strategic use with the proven guidance found in Retail Analytics.

This book has a focus on the development and deployment of the Industrial Internet of Things (IIoT) paradigm, discussing frameworks, methodologies, benefits and limitations, as well as providing case studies of employing the IoT vision in the industrial domain. IIoT is becoming an attractive business reality for many organisations such as manufacturing, logistics, oil and gas, energy and other utilities, mining, aviation, and many more. The opportunities for this paradigm are huge, and according to one report, the IIoT market is predicted to reach $125 billion by 2021.

The driving philosophy behind the IIoT is that smart machines are better than humans at accurately capturing, analysing and communicating real-time data. The underlying technologies include distributed computing, machine learning, artificial intelligence, and machine-to-machine communication, with a typical IIoT system consisting of intelligent systems (applications, controllers, sensors, and security mechanisms), data communication infrastructure (cloud computing, edge computing, etc.), data analytics (to support business intelligence and corporate decision making), and most importantly the human element. The promised benefits of the IIoT include enhanced safety, better reliability, smart metering, inventory management, equipment tracking, and facilities management. There are, however, numerous issues that are also becoming the focus of active research, such as concerns regarding service availability, data security, and device communication. Lack of ubiquitous interoperability between heterogeneous devices is also a major concern. This book intends to fill a gap in the IIoT literature by providing the scientific contributions and latest developments from researchers and practitioners of international repute, focusing on frameworks, methodologies, benefits, and inherent issues/barriers to connected environments, especially in industrial settings. The intended audience includes network specialists, hardware engineers, and security experts who wish to adopt newer approaches for device connectivity, IoT security, and sensor-based devices design. University level students, researchers and practitioners will also find the latest innovation in technology and newer approaches relevant to the IIoT from a distributed computing perspective.

A classic that just keeps getting better, The Little SAS Book is essential for anyone learning SAS programming. Lora Delwiche and Susan Slaughter offer a user-friendly approach so that readers can quickly and easily learn the most commonly used features of the SAS language. Each topic is presented in a self-contained, two-page layout complete with examples and graphics. Nearly every section has been revised to ensure that the sixth edition is fully up-to-date. This edition is also interface-independent, written for all SAS programmers whether they use SAS Studio, SAS Enterprise Guide, or the SAS windowing environment. New sections have been added covering PROC SQL, iterative DO loops, DO WHILE and DO UNTIL statements, %DO statements, using variable names with special characters, the ODS EXCEL destination, and the XLSX LIBNAME engine. This title belongs on every SAS programmer's bookshelf. It's a resource not just to get you started, but one you will return to as you continue to improve your programming skills. Learn more about the updates to The Little SAS Book, Sixth Edition here. Reviews for The Little SAS Book, Sixth Edition can be read here.

Intelligence at the Edge: Using SAS with the Internet of Things

Managing and Mining Sensor Data

Special Collection

Data Analysis Using SAS

Opportunities and Challenges in Cloud, Fog and Edge Computing

Using SAS with the Internet of Things

The Executive's Guide to Enterprise Social Media Strategy

A guided tour of the rapidly evolving networked world of connected devices, objects, and people that is changing the way we live and work. Since the publication of the original edition of this volume in the MIT Press Essential Knowledge series, the Internet of Things (IoT) has evolved from a novelty (look! my phone connects to my lamp!) to a mainstream technology framework that we rely on every day to accomplish many tasks. This revised and updated edition reports on the latest developments in this rapidly evolving networked world of connected devices, objects, and people that is changing the way we live and work. Business and technology writer Samuel Greengard takes us on a guided tour of the IoT, describing smart lightbulbs, sensors in phones that trigger earthquake warnings, 3D headsets that connect users to business expos through completely immersive virtual reality environments, and more. He offers a clear explanation of the technology that builds and manages the IoT and examines the growing array of consumer devices now available, from smart door locks to augmented reality fitting rooms. Greengard also shows how the IoT is part of the Fourth Industrial Revolution, which is transforming business through smart manufacturing, end-to-end supply chain visibility, integrated artificial intelligence, and much more. He considers risks associated with the IoT, including threats to free speech, growing inequality, and an increase in cybercrime. Finally, he takes a look at the future of a hyperconnected world and what it means to people and human interaction.

SAS Programming with Medicare Administrative Data is the most comprehensive resource available for using Medicare data with SAS. This book teaches you how to access Medicare data and, more importantly, how to apply this data to your research. Knowing how to use Medicare data to answer common research and business questions is a critical skill for many SAS users. Due to its complexity, Medicare data requires specific programming knowledge in order to be applied accurately. Programmers need to understand the Medicare program in order to interpret and utilize its data. With this book, you'll learn the entire process of programming with Medicare data—from obtaining access to data; to measuring cost, utilization, and quality; to overcoming common challenges. Each chapter includes exercises that challenge you to apply concepts to real-world programming tasks. SAS Programming with Medicare Administrative Data offers beginners a programming project template to follow from beginning to end. It also includes more complex questions and discussions that are appropriate for advanced users. Matthew Gillingham has created a book that is both a foundation for programmers new to Medicare data and a comprehensive reference for experienced programmers. This book is part of the SAS Press program.

IRENA’s Innovation Landscape report highlights innovations in enabling technologies.

This book combines the three dimensions of technology, society and economy to explore the advent of today’s cloud ecosystems as successors to older service ecosystems based on networks. Further, it describes the shifting of services to the cloud as a long-term trend that is still progressing rapidly.The book adopts a comprehensive perspective on the key success factors for the technology – compelling business models and ecosystems including private, public and national organizations. The authors explore the evolution of service ecosystems, describe the similarities and differences, and analyze the way they have created and changed industries. Lastly, based on the current status of cloud computing and related technologies like virtualization, the internet of things, fog computing, big data and analytics, cognitive computing and blockchain, the authors provide a revealing outlook on the possibilities of future technologies, the future of the internet, and the potential impacts on business and society.

Digital Forensic Investigation of Internet of Things (IoT) Devices

How Social Networks Are Radically Transforming Your Business

13th International Conference, NEW2AN 2013, and 6th Conference, ruSMART 2013, St. Petersburg, Russia, August 28-30, 2013. Proceedings

Industrial IoT Technologies and Applications

Retail Analytics
4th EAI International Conference, Industrial IoT 2020, Virtual Event, December 11, 2020, Proceedings
SAS and R

Explore powerful SAS analytics and the Internet of Things! The world that we live in is more connected than ever before. The Internet of Things (IoT) consists of mechanical and electronic devices connected to one another and to software through the internet. Businesses can use the IoT to quickly make intelligent decisions based on massive amounts of data gathered in real time from these connected devices. IoT increases productivity, lowers operating costs, and provides insights into how businesses can serve existing markets and expand into new ones. Intelligence at the Edge: Using SAS with the Internet of Things is for anyone who wants to learn more about the rapidly changing field of IoT. Current practitioners explain how to apply SAS software and analytics to derive business value from the Internet of Things. The cornerstone of this endeavor is SAS Event Stream Processing, which enables you to process and analyze continuously flowing events in real time. With step-by-step guidance and real-world scenarios, you will learn how to apply analytics to streaming data. Each chapter explores a different aspect of IoT, including the analytics life cycle, monitoring, deployment, geofencing, machine learning, artificial intelligence, condition-based maintenance, computer vision, and edge devices.

A timely look at effective use of social network analysis within the telecommunications industry to boost customer relationships The key to any successful company is the relationship that it builds with its customers. This book shows how social network analysis, analytics, and marketing knowledge can be combined to create a positive customer experience within the telecommunications industry. Reveals how telecommunications companies can effectively enhance their relationships with customers Provides the groundwork for defining social network analysis Defines the tools that can be used to address social network problems A must-read for any professionals eager to distinguish their products in the marketplace, this book shows you how to get it done right, with social network analysis.

A culmination of the author's many years of consulting and teaching, Design and Analysis of Experiments with SAS provides practical guidance on the computer analysis of experimental data. It connects the objectives of research to the type of experimental design required, describes the actual process of creating the design and collecting the data, shows how to perform the proper analysis of the data, and illustrates the interpretation of results. Drawing on a variety of application areas, from pharmaceuticals to machinery, the book presents numerous examples of experiments and exercises that enable students to perform their own experiments. Harnessing the capabilities of SAS 9.2, it includes examples of SAS data step programming and IML, along with procedures from SAS Stat, SAS QC, and SAS OR. The text also shows how to display experimental results graphically using SAS ODS graphics. The author emphasizes how the sample size, the assignment of experimental units to combinations of treatment factor levels (error control), and the selection of treatment factor combinations (treatment design) affect the resulting variance and bias of estimates as well as the validity of conclusions. This textbook covers both classical ideas in experimental design and the latest research topics. It clearly discusses the objectives of a research project that lead to an appropriate design choice, the practical aspects of creating a design and performing experiments, and the interpretation of the results of computer data analysis. SAS code and ancillaries are available at http://lawson.mooo.com

Industrial internet of things (IIoT) is changing the face of industry by completely redefining the way stakeholders, enterprises, and machines connect and interact with each other in the industrial digital ecosystem. Smart and connected factories, in which all the machinery transmits real-time data, enable industrial data analytics for improving operational efficiency, productivity, and industrial processes, thus creating new business opportunities, asset utilization, and

connected services. IIoT leads factories to step out of legacy environments and arcane processes towards open digital industrial ecosystems. Innovations in the Industrial Internet of Things (IIoT) and Smart Factory is a pivotal reference source that discusses the development of models and algorithms for predictive control of industrial operations and focuses on optimization of industrial operational efficiency, rationalization, automation, and maintenance. While highlighting topics such as artificial intelligence, cyber security, and data collection, this book is ideally designed for engineers, manufacturers, industrialists, managers, IT consultants, practitioners, students, researchers, and industrial industry professionals.

MicroPython for the Internet of Things

Convergence of Artificial Intelligence and the Internet of Things

Methods, Models, Approaches, Techniques, Algorithms, and Tools

Practical Internet of Things Security

Innovations in the Industrial Internet of Things (IIoT) and Smart Factory

Learning SAS by Example

An Approach to Clustering and Visualization

SAS Visual Data Mining and Machine Learning, powered by SAS Viya, means that users of all skill levels can visually explore data on their own while drawing on powerful in-memory technologies for faster analytic computations and discoveries. You can manually program with custom code or use the features in SAS Studio, Model Studio, and SAS Visual Analytics to automate your data manipulation and modeling. These programs offer a flexible, easy-to-use, self-service environment that can scale on an enterprise-wide level. In this book, we will explore some of the many features of SAS Visual Data Mining and Machine Learning including: programming in the Python interface; new, advanced data mining and machine learning procedures; pipeline building in Model Studio, and model building and comparison in SAS Visual Analytics.

Data Analysis Using SAS offers a comprehensive core text focused on key concepts and techniques in quantitative data analysis using the most current SAS commands and programming language. The coverage of the text is more evenly balanced among statistical analysis, SAS programming, and data/file management than any available text on the market. It provides students with a hands-on, exercise-heavy method for learning basic to intermediate SAS commands while understanding how to apply statistics and reasoning to real-world problems. Designed to be used in order of teaching preference by instructor, the book is comprised of two primary sections: the first half of the text instructs students in techniques for data and file managements such as concatenating and merging files, conditional or repetitive processing of variables, and observations. The second half

of the text goes into great depth on the most common statistical techniques and concepts - descriptive statistics, correlation, analysis of variance, and regression - used to analyze data in the social, behavioral, and health sciences using SAS commands. A student study at www.sagepub.com/pengstudy comes replete with a multitude of computer programs, their output, specific details on how to check assumptions, as well as all data sets used in the book. Data Analysis Using SAS is a complete resource for Data Analysis I and II, Statistics I and II, Quantitative Reasoning, and SAS Programming courses across the social and behavioral sciences and health - especially those that carry a lab component.

This informative text/reference presents a detailed review of the state of the art in industrial sensor and control networks. The book examines a broad range of applications, along with their design objectives and technical challenges. The coverage includes fieldbus technologies, wireless communication technologies, network architectures, and resource management and optimization for industrial networks. Discussions are also provided on industrial communication standards for both wired and wireless technologies, as well as for the Industrial Internet of Things (IIoT). Topics and features: describes the FlexRay, CAN, and Modbus fieldbus protocols for industrial control networks, as well as the MIL-STD-1553 standard; proposes a dual fieldbus approach, incorporating both CAN and ModBus fieldbus technologies, for a ship engine distributed control system; reviews a range of industrial wireless sensor network (IWSN) applications, from environmental sensing and condition monitoring, to process automation; examines the wireless networking performance, design requirements, and technical limitations of IWSN applications; presents a survey of IWSN commercial solutions and service providers, and summarizes the emerging trends in this area; discusses the latest technologies and open challenges in realizing the vision of the IIoT, highlighting various applications of the IIoT in industrial domains; introduces a logistics paradigm for adopting IIoT technology on the Physical Internet. This unique work will be of great value to all researchers involved in industrial sensor and control networks, wireless networking, and the Internet of Things.

Although the web and online SAS® communities can provide

volumes of information for programmers, these resources are often overwhelming and lack a simple path to guide coding SAS. This reference, however, does provide such a path from a data user's standpoint vs. seeing things as a code writer. Written by an experienced SAS programmer, this book lets SAS coders easily find explanations and clarification to typical programming problems. This book presents practical real-world data analysis steps encountered by analysts in the field. These steps include the following: Getting to know raw data Understanding variables Getting data into SAS Creating new data variables Performing data manipulations, including sorting, ranking, grouping, subtotal, total, and percentage Statistical testing under a broad range of logical and conditional settings Data visualization Throughout this book, statements and codes are accompanied by thorough annotation. Line-by-line explanations ensure that all terms are clearly explained. Code examples and sample codes have broad usages. All the examples are related to highway transportation where the use of big data is exploding and presenting new challenges and opportunities for growth. Clear and precise practical introductory material on statistics is integrated into the relevant SAS procedures to bolster users' confidence in applying such methods to their own work. Comprehensive and foundational coverage, systematic introduction of programming topics, thoroughly annotated code examples, and real-world code samples combine to make SAS® Coding Primer and Reference Guide an indispensable reference for beginners and experienced programmers.

Evolutions and Innovations

Research and Applications at the Intersection of DS and IoT

SAS® Coding Primer and Reference Guide

The Cloud-to-Thing Continuum

The Internet of Things, revised and updated edition

Strategies for Product Development Using Streaming, Sensor Fusion and Deep Learning

Security and Device Connectivity, Smart Environments, and Industry 4.0

Computer vision is a field of artificial intelligence that trains computers to interpret and understand the visual world. In recent years, computer vision has begun to rival and even surpass human visual abilities in many areas. SAS offers many different solutions to train computers to "see" by identifying and classifying objects, and

several groundbreaking papers have been written to demonstrate these techniques. The papers included in this special collection demonstrate how the latest computer vision tools and techniques can be used to solve a variety of business problems.

A practical, indispensable security guide that will navigate you through the complex realm of securely building and deploying systems in our IoT-connected world Key Features Learn best practices to secure your data from the device to the cloud Use systems security engineering and privacy-by-design principles to design a secure IoT ecosystem A practical guide that will help you design and implement cyber security strategies for your organization Book Description With the advent of the Internet of Things (IoT), businesses have to defend against new types of threat. The business ecosystem now includes the cloud computing infrastructure, mobile and fixed endpoints that open up new attack surfaces. It therefore becomes critical to ensure that cybersecurity threats are contained to a minimum when implementing new IoT services and solutions. This book shows you how to implement cybersecurity solutions, IoT design best practices, and risk mitigation methodologies to address device and infrastructure threats to IoT solutions. In this second edition, you will go through some typical and unique vulnerabilities seen within various layers of the IoT technology stack and also learn new ways in which IT and physical threats interact. You will then explore the different engineering approaches a developer/manufacturer might take to securely design and deploy IoT devices. Furthermore, you will securely develop your own custom additions for an enterprise IoT implementation. You will also be provided with actionable guidance through setting up a cryptographic infrastructure for your IoT implementations. You will then be guided on the selection and configuration of Identity and Access Management solutions for an IoT implementation. In conclusion, you will explore cloud security architectures and security best practices for operating and managing cross-organizational, multi-domain IoT deployments. What you will learn Discuss the need for separate security requirements and apply security engineering principles on IoT devices Master the operational aspects of planning, deploying, managing, monitoring, and detecting the remediation and disposal of IoT systems Use Blockchain solutions for IoT authenticity and integrity Explore additional privacy features emerging in the IoT industry, such as anonymity, tracking issues, and countermeasures Design a fog computing architecture to support IoT edge analytics Detect and respond to IoT security incidents and compromises Who this book is for This book targets IT Security Professionals and Security Engineers (including pentesters, security architects and ethical hackers) who

would like to ensure the security of their organization's data when connected through the IoT. Business analysts and managers will also find this book useful.

This book highlights state-of-the-art research on big data and the Internet of Things (IoT), along with related areas to ensure efficient and Internet-compatible IoT systems. It not only discusses big data security and privacy challenges, but also energy-efficient approaches to improving virtual machine placement in cloud computing environments. Big data and the Internet of Things (IoT) are ultimately two sides of the same coin, yet extracting, analyzing and managing IoT data poses a serious challenge. Accordingly, proper analytics infrastructures/platforms should be used to analyze IoT data. Information technology (IT) allows people to upload, retrieve, store and collect information, which ultimately forms big data. The use of big data analytics has grown tremendously in just the past few years. At the same time, the IoT has entered the public consciousness, sparking people's imaginations as to what a fully connected world can offer. Further, the book discusses the analysis of real-time big data to derive actionable intelligence in enterprise applications in several domains, such as in industry and agriculture. It explores possible automated solutions in daily life, including structures for smart cities and automated home systems based on IoT technology, as well as health care systems that manage large amounts of data (big data) to improve clinical decisions. The book addresses the security and privacy of the IoT and big data technologies, while also revealing the impact of IoT technologies on several scenarios in smart cities design. Intended as a comprehensive introduction, it offers in-depth analysis and provides scientists, engineers and professionals the latest techniques, frameworks and strategies used in IoT and big data technologies.

What can you do with a degree in math? This book addresses this question with 125 career profiles written by people with degrees and backgrounds in mathematics. With job titles ranging from sports analyst to science writer to inventory specialist to CEO, the volume provides ample evidence that one really can do nearly anything with a degree in mathematics. These professionals share how their mathematical education shaped their career choices and how mathematics, or the skills acquired in a mathematics education, is used in their daily work. The degrees earned by the authors profiled here are a good mix of bachelors, masters, and PhDs. With 114 completely new profiles since the third edition, the careers featured within accurately reflect current trends in the job market. College mathematics faculty, high school teachers, and career counselors will

all find this a useful resource. Career centers, mathematics departments, and student lounges should have a copy available for student browsing. In addition to the career profiles, the volume contains essays from career counseling professionals on the topics of job-searching, interviewing, and applying to graduate school.

Getting Started with the Internet of Things

SAS Programming with Medicare Administrative Data

The Internet of Things

A Primer, Sixth Edition

Preventing Health Care Fraud :.

The Secret Weapon

Segmentation Analytics with SAS Viya

What is the Internet of Things? It's billions of embedded computers, sensors, and actuators all connected online. If you have basic programming skills, you can use these powerful little devices to create a variety of useful systems—such as a device that waters plants when the soil becomes dry. This hands-on guide shows you how to start building your own fun and fascinating projects. Learn to program embedded devices using the .NET Micro Framework and the Netduino Plus board. Then connect your devices to the Internet with Pachube, a cloud platform for sharing real-time sensor data. All you need is a Netduino Plus, a USB cable, a couple of sensors, an Ethernet connection to the Internet—and your imagination. Develop programs with simple outputs (actuators) and inputs (sensors) Learn about the Internet of Things and the Web of Things Build client programs that push sensor readings from a device to a web service Create server programs that allow you to control a device over the Web Get the .NET classes and methods needed to implement all of the book's examples Quickly learn to program for microcontrollers and IoT devices without a lot of study and expense. MicroPython and controllers that support it eliminate the need for programming in a C-like language, making the creation of IoT applications and devices easier and more accessible than ever. MicroPython for the Internet of Things is ideal for readers new to electronics and the world of IoT. Specific examples are provided covering a range of supported devices, sensors, and MicroPython boards such as Pycom ’s WiPy modules and MicroPython ’s pyboard. Never has programming for microcontrollers been easier. The book takes a practical and hands-on approach without a lot of detours into the depths of theory. The book: Shows a faster and easier way to program microcontrollers and IoT devices Teaches MicroPython, a variant of one of the most widely used scripting languages Is friendly and accessible to those new to electronics, with fun example projects What You'll Learn Program in MicroPython Understand sensors and basic electronics Develop your own IoT projects Build applications for popular boards such as WiPy and pyboard Load MicroPython on the ESP8266 and similar boards Interface with hardware breakout boards Connect hardware to software through MicroPython Explore the easy-to-use Adafruit IO connecting your microcontroller to the cloud Who This Book Is For Anyone interested in building IoT solutions without the heavy burden of programming in C++ or C. The book also appeals to those wanting an easier way to work with hardware than is provided by the Arduino and the Raspberry Pi platforms.

Social media has already transformed society. Now it is poised to revolutionize communications and collaborative business processes. This book provides you with an actionable framework for developing and executing successful enterprise social networking strategies. Using straightforward language, accompanied by exhibits and fleshed out with real-world stories and revealing anecdotes, you will learn how to develop your own internal corporate social media strategy. Through the use of in-depth interviews with leading companies using these strategies, you will also discover best practices that will propel your business to new heights.

The Internet of Things offers massive societal and economic opportunities while at the same time significant challenges, not least the delivery and management of the technical infrastructure underpinning it, the deluge of data generated from it, ensuring privacy and security, and capturing value from it. This Open Access Pivot explores these challenges, presenting the state of the art and future directions for research but also frameworks for making sense of this complex area. This book provides a variety of perspectives on how technology innovations such as fog, edge and dew computing, 5G networks, and distributed intelligence are making us rethink conventional cloud computing to support the Internet of Things. Much of this book focuses on technical aspects of the Internet of Things, however, clear methodologies for mapping the business value of the Internet of Things are still missing. We provide a value mapping framework for the Internet of Things to address this gap. While there is much hype about the Internet of Things, we have yet to reach the tipping point. As such, this book provides a timely entr é e for higher education educators, researchers and students, industry and policy makers on the technologies that promise to reshape how society interacts and operates. Theo Lynn is Full Professor of Digital Business at DCU Business School, Ireland and Director of the Irish Institute of Digital Business. John G. Mooney is Associate Professor of Information Systems and Technology Management at the Pepperdine Graziadio Business School, United States. Brian Lee is Director of the Software Research Institute at Athlone Institute of Technology. Patricia Takako Endo is a Postdoctoral Research Fellow at the Irish Institute of Digital Business, Dublin City University, Ireland, and a Professor at Universidade de Pernambuco, Brazil.

Industrial Sensors and Controls in Communication Networks

Data Science and Internet of Things

Data Management, Statistical Analysis, and Graphics, Second Edition

Innovation Landscape brief: Internet of Things

From Wired Technologies to Cloud Computing and the Internet of Things

Social Network Analysis in Telecommunications

Internet of Things and Big Data Analytics Toward Next-Generation Intelligence

This book constitutes the thoroughly refereed post-conference proceedings of the 4th International Conference on Industrial IoT Technologies and Applications, IoT 2020, held in December 2020. Due to Covid-19 pandemic the conference was held virtually. The widespread deployment of wireless sensor networks, clouds, industrial robot, embedded computing and inexpensive sensors has facilitated industrial

Internet of Things (IndustrialIoT) technologies and fostered some emerging applications. The 14 carefully reviewed papers are a selection from 28 submissions and detail topics in the context of IoT for a smarter industry.

This book focuses on the combination of IoT and data science, in particular how methods, algorithms, and tools from data science can effectively support IoT. The authors show how data science methodologies, techniques and tools, can translate data into information, enabling the effectiveness and usefulness of new services offered by IoT stakeholders. The authors posit that if IoT is indeed the infrastructure of the future, data structure is the key that can lead to a significant improvement of human life. The book aims to present innovative IoT applications as well as ongoing research that exploit modern data science approaches. Readers are offered issues and challenges in a cross-disciplinary scenario that involves both IoT and data science fields. The book features contributions from academics, researchers, and professionals from both fields.

Autonomous Control for a Reliable Internet of Services